

Appl. No. : 09/731,474
Filed : December 6, 2000

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A decoder apparatus comprising:
~~a video decoder configured to decode a received encoded video sequence into a decoded video sequence containing compression artifacts; and~~
~~a filter module coupled to-with the video decoder and the output, and-said filter module~~ configured to filter ~~the~~ compression artifacts ~~from~~ ~~in~~ the decoded video sequence ~~reeived from the video deeoeder~~, the filter module ~~that is configured to filter the compression artifacts~~ having a variable filter strength that is a function of ~~detected motion~~ activity within the video sequence.
2. (Original) The decoder apparatus of Claim 1, wherein the filter strength is adjustable to one of a predetermined number of levels.
3. (Original) The decoder apparatus of Claim 2, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.
4. (Original) The decoder apparatus of Claim 3, wherein the medium level is a default level.
5. (Currently amended) A decoder apparatus for a video compression and decompression system, comprising:
an input to receive an encoded video sequence;
an output ~~for operative to transmit~~ a decoded video sequence;
~~a video decoder coupled to-with the input and configured to decode the received encoded video sequence into a decoded video sequence that contains compression artifacts; and~~
~~a filter module coupled to-with the video decoder and the output-and, said filter module~~ configured to filter ~~a~~ ~~the~~ compression artifacts in the decoded video sequence ~~reeived from the video deeoeder~~, the filter module ~~that is configured to filter the compression artifacts~~ having a variable filter strength that is a function of ~~detected the~~ motion activity within the video sequence, wherein the filter module includes an activity counter configured to categorize each frame of the decoded video sequence as a ~~high-first~~ activity frame or as a ~~low-second~~ activity frame.

Appl. No. : 09/731,474
Filed : December 6, 2000

6. (Original) The decoder apparatus of Claim 5, wherein the activity counter increases a first counter value for each high activity frame and decreases the first counter value for each low activity frame.

7. (Original) The decoder apparatus of Claim 6, wherein the activity counter decreases a second counter value for each high activity frame and increases the second counter value for each low activity frame.

8. (Original) The decoder apparatus of Claim 7, wherein the activity counter determines a difference between the first counter value and the second counter value.

9. (Original) The decoder apparatus of Claim 8, wherein the filter module includes a threshold detector configured to compare the difference with at least one predetermined threshold value and configured to generate a control signal to adjust the filter strength.

10. (Original) The decoder apparatus of Claim 9, wherein the control signal adjusts the filter strength to one of a high level, a medium level and a weak level.

11. (Original) The decoder apparatus of Claim 10, wherein the medium level is a default level.

12. (Cancelled)

13. (Currently amended) A filter module for a video compression and decompression system, comprising:

an input to receive a decoded video sequence containing compression artifacts;
~~an output for the decoded video sequence;~~
an activity counter configured to determine motion activity within the decoded video sequence received by the input; and

a threshold detector coupled ~~to~~with the activity counter and configured to adjust a filter strength ~~for~~to ~~removing~~remove compression artifacts as a function of the determined motion activity within the received decoded video sequence, the threshold detector selectively adjusting the filter strength to remove compression artifacts to one of a predetermined number of levels; and

an output for supplying the decoded video sequence with removed compression artifacts.

14. (Currently amended) A method of filtering a decoded video sequence in a video compression and decompression system, comprising:

Appl. No. : 09/731,474
Filed : December 6, 2000

receiving a decoded video sequence containing compression artifacts;
determining a motion activity of each frame of the decoded video sequence;
categorizing each frame as a frame of high activity or as a frame of low activity
based on the determined motion activity; and

adjusting a filter strength of a filter to remove compression artifacts ~~to filter~~
within the decoded video sequence as a function of the determined motion activity.

15. (Currently amended) A method of filtering a decoded video sequence in a video compression and decompression system, comprising:

receiving a decoded video sequence containing compression artifacts;
determining a motion activity of each frame of the decoded video sequence;
categorizing each frame as a frame of high activity or as a frame of low activity
based on the determined motion activity;

adjusting a filter strength of a filter to remove compression artifacts ~~to filter~~
within the decoded video sequence as a function of the determined motion activity;

increasing a first counter value for each high activity frame and decreasing the
first counter value for each low activity frame;

decreasing a second counter value for each high activity frame and increasing the
second counter value for each low activity frame; and

determining a difference between the first counter value and the second counter
value.

16. (Original) The method of Claim 15, further comprising:

comparing the difference with at least one predetermined threshold value; and
generating a control signal to adjust the filter strength.

17. (Original) The method of Claim 16, wherein adjusting the filter strength includes
selectively adjusting the filter strength to one of a number of predetermined levels.

18. (Original) The method of Claim 16, wherein adjusting the filter strength includes
selectively adjusting the filter strength to one of a high level, a medium level and a weak level.

19. (Original) The method of Claim 18, wherein adjusting the filter strength includes
adjusting the filter strength to the medium level is a default level.

Appl. No. : **09/731,474**
Filed : **December 6, 2000**

20. (Original) The method of Claim 19, further comprising adjusting the filter strength to the strong level if the difference is positive and if the difference is greater than a first threshold value.

21. (Original) The method of Claim 20, further comprising resetting the filter strength to the medium level if the difference is negative and if an absolute value of the difference is greater than a second threshold value.

22. (Original) The method of Claim 22, further comprising adjusting the filter strength to the weak level if the difference is negative and if an absolute value of the difference is greater than a third threshold value.

23. (Original) The method of Claim 22, further comprising resetting the filter strength to the medium level if the difference is positive and if the difference is greater than a fourth threshold value

24. (Previously Presented) The filter module of Claim 13, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.

25. (Previously Presented) The filter module of Claim 24, wherein the medium level is a default level.

26. (Previously Presented) The method of Claim 14, wherein the filter strength is adjustable to one of a predetermined number of levels.

27. (Previously Presented) The method of Claim 14, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.

28. (Previously Presented) The method of Claim 27, wherein the medium level is a default level.

29. (Previously Presented) An electronic filter comprising:
a filter module with a variable filter strength and configured to filter compression artifacts from a decoded video sequence the variable filter strength being a function of a detected motion activity within the decoded video sequence.

30. (Previously Presented) The filter of Claim 29, wherein the filter strength is adjustable to one of a predetermined number of levels.

31. (Previously Presented) The filter of Claim 29, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.

Appl. No. : **09/731,474**
Filed : **December 6, 2000**

32. (Previously Presented) The decoder apparatus of Claim 31, wherein the medium level is a default level.

33. (Currently amended) A method of filtering a decoded video sequence in a video compression and decompression system, comprising:

receiving a decoded video sequence containing compression artifacts; and
adjusting a filter strength of a filter to ~~filter~~remove compression artifacts ~~from~~
within the decoded video sequence as a function of motion activity in the decoded video sequence.

34. (Previously Presented) The method of Claim 33, wherein the filter strength is adjustable to one of a predetermined number of levels.

35. (Previously Presented) The method of Claim 33, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.

36. (Previously Presented) The method of Claim 35, wherein the medium level is a default level.

37. (Currently amended) A program storage device storing instructions that when executed performs the method comprising, comprising:

receiving a decoded video sequence containing compression artifacts; and
adjusting a filter strength of a filter to ~~filter~~reduce compression artifacts ~~from~~
within the decoded video sequence as a function of motion activity in the decoded video sequence.

38. (Previously Presented) The method of Claim 37, wherein the filter strength is adjustable to one of a predetermined number of levels.

39. (Previously Presented) The method of Claim 37, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.

40. (Previously Presented) The method of Claim 39, wherein the medium level is a default level.

41. (Currently amended) An electronic filter, comprising:
means for receiving a decoded video sequence containing compression artifacts;
and

Appl. No. : 09/731,474
Filed : December 6, 2000

means adjusting a filter strength of a filter to filter compression artifacts from within the decoded video sequence as a function of motion activity in the decoded video sequence.

42. (Previously Presented) The electronic filter of Claim 41, wherein the filter strength is adjustable to one of a predetermined number of levels.

43. (Previously Presented) The electronic filter of Claim 41, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.

44. (Previously Presented) The electronic filter of Claim 43, wherein the medium level is a default level.

45. (Previously Presented) The electronic filter of Claim 41, wherein the compression artifacts include mosquito or block artifacts.

46. (Currently Amended) A method of filtering a decoded video sequence in a video compression and decompression system, comprising:

receiving a video sequence;

decoding the video sequence into a decoded video sequence containing compression artifacts; and

adjusting a filter strength of a filter to filter remove compression artifacts from the decoded video sequence, wherein the decoded video sequence comprises a plurality of frames, each of the frames being comprised of a plurality of macroblocks, the filtering filter strength to remove the compression artifacts being performed adjusted as a function of motion activity in the decoded video sequence.

47. (Previously Presented) The electronic filter of Claim 46, wherein the filter strength is adjustable to one of a high level, a medium level and a weak level.

48. (Previously Presented) The electronic filter of Claim 46, wherein the medium level is a default level.